

1937/PCT

**Re: International Patent Application No. PCT/CH03/000240**  
**"Anchoring means for intervertebral implants"**  
**in the name of Mathys Medizinaltechnik AG**  
**to be transferred to Synthes GmbH**  
**(amendments under PCT Article 19)**

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do hereby certify that I am conversant with the English and German languages, and am a competent translator thereof, and I further certify that to the best of my knowledge and belief the attached document is a true and correct translation made by me of the documents in the German language attached hereto.

Signature of translator: ..... *P. Kaiser* .....

Dated ..... *21.12.2005* .....

English translation of the claims amended under Article 19 PCT of the International Patent Application No. PCT/CH2003/000240 "Anchoring means for intervertebral implants" in the name of Mathys Medizinaltechnik AG

**AMENDED CLAIMS**

**Received by the International Bureau on April 2, 2004 (2.4.2004);  
original claims 1-16 replaced by modified claims 1-15**

**Patent claims**

1. An intervertebral implant (15) with two anchoring means (21) to fix the intervertebral implant (15) on the end plates of a body (19, 20) of the vertebra wherein
  - 5     A) each anchoring means (21) comprises an anchoring part (1) comprising a central axis (6) and two end faces (4, 5) transverse to the central axis (6),
  - B) each anchoring means (21) comprises at least two spikes (7) that protrude past the end faces (4, 5), are parallel to the central axis (6) and can be pressed into an end plate of a body (19, 20) of the vertebra,
  - 10    characterised in that
  - C) the anchoring part (1) comprises a hollow space (3) passing through parallel to the central axis (6),
  - D) the anchoring part (1) comprises fastening means (9) by means of which the anchoring part can be detachably locked on an intervertebral implant
  - 15    (15),
  - E) the intervertebral implant (15) comprises a closing plate each (13, 14) that intersects the central axis (6), and
  - F) the closing plates (13, 14) can pass through the hollow spaces (3) in the anchoring parts (1).
  - 20
2. An intervertebral implant (15) according to claim 1, characterised in that the fastening means (9) can be elastically deformed transversely to the central axis (6) and in the non-deformed state protrude into the hollow space (3).
- 25 3. An intervertebral implant (15) according to claim 2, characterised in that the fastening means (9) are hooks (10) that can be elastically deformed transversely to the central axis (6) with lugs (11) facing the central axis (6).

4. An intervertebral implant (15) according to claim 3, characterised in that the hooks (10) are provided in the hollow space (3).
5. An intervertebral implant (15) according to any one of claims 1 to 4,  
5 characterised in that the fastening means (9) and the anchoring part (1) are integral.
6. An intervertebral implant (15) according to any one of claims 3 to 5,  
10 characterised in that the hollow space (3) comprises depressions (8), wherein the hooks (10) are provided.
7. An intervertebral implant (15) according to claim 6, characterised in that  
perpendicularly to the central axis (6) the recesses (8) have a depth  $T$  and the  
maximum length of the lugs (11), measured perpendicularly to the central axis  
15 (6), is  $L$ , while  $L < T$ .
8. An intervertebral implant (15) according to any one of claims 1 to 7,  
characterised in that the anchoring part (1) has an annular construction and  
the cross-sectional surface of the hollow space (3) at right angles to the  
central axis (6) and/or the cross-sectional surface of the anchoring part (1)  
20 bordered by the external sheathing surface at right angles to the central axis  
(6) are circular surfaces, elliptical surfaces, polygonal surfaces or oval  
surfaces.
9. An intervertebral implant (15) according to any one of claims 1 to 8,  
25 characterised in that at each end it comprises a closing plate (13, 14) that  
intersects the central axis (6) and that the shape of the hollow space (3) is  
made to suit the closing plates (13, 14).
10. An intervertebral implant (15) according to claim 9, characterised in that the  
30 closing plates (13, 14) are mounted without clearance in the hollow spaces  
(3) of the anchoring parts (1) and can be displaced relative to the central axis  
(6).

11. An intervertebral implant (15) according to any one of claims 1 to 8,  
characterised in that the anchoring parts (1) have a clearance for rotation  
about the central axis (6) with fastening means (9) fixed on the closing plates  
5 (13, 14).
12. An intervertebral implant (15) according to any one of claims 1 to 11,  
characterised in that the closing plates (13, 14) comprise second fastening  
means, in which the fastening means (9) can be engaged on the anchoring  
10 parts (1).
13. An intervertebral implant (15) according to claim 12, characterised in that it  
has an external sheathing surface (16) and as second fastening means it  
comprises depressions (18) protruding into the sheathing surface (16)  
15 transversely to the central axis (6) for the partial accommodation of the  
fastening means (9).
14. An intervertebral implant (15) according to any one of claims 1 to 13,  
characterised in that the closing plates (13, 14) have axially projecting  
20 ~~segments (22) with reduced diameters.~~
15. A method to fasten an implant according to any one of claims 1 to 14 within  
an intervertebral space, characterised by the steps:
- 25 a) enabling the access to the intervertebral space by means of an  
anterolateral, ventral lateral, transperitoneal or retroperitoneal surgical  
procedure,
- b) tractioning both bodies (19, 20) of the vertebra adjacent to the  
intervertebral space,
- c) scraping out the intervertebral space,
- 30 d) introducing the intervertebral implant (15) with the anchoring means (1)  
pushed together,
- e) moving the anchoring parts (1) axially away from one another until the  
spikes (7) are adequately pressed into the base plate or the cover plate of  
the adjacent bodies (19, 20) of the vertebra, and

f) fixing the fastening means (9) on the intervertebral implant (15).